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IS 6899 (1997): Textiles - High density polyethylene (HDPE) woven fabrics [TXD 23: Textile Materials made from Polyolefins]

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के बुने कपड़े — विशिष्टि  
( दूसरा पुनरीक्षण )

*Indian Standard*

TEXTILES — HIGH DENSITY  
POLYETHYLENE (HDPE) WOVEN  
FABRICS — SPECIFICATION

*(Second Revision)*

ICS 59.080.30

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BUREAU OF INDIAN STANDARDS  
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## FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Textile Materials Made from Polyolefins (Excluding Cordage) Sectional Committee had been approved by the Textile Division Council.

This standard originally published in 1973 was revised in 1984.

The standard has been revised again to modify the mass and breaking load of the various varieties of HDPE fabric in view of the availability of HDPE tapes of superior tensile properties. Provision has been made for supply of fabric having mass other than those specified in the standard subject to agreement between the buyer and the seller.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value observed or calculated, expressing the result of a test shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*

# TEXTILES — HIGH DENSITY POLYETHYLENE (HDPE) WOVEN FABRICS — SPECIFICATION

*(Second Revision)*

## 1 SCOPE

This standard specifies requirements of five varieties of high density polyethylene (HDPE) woven fabrics generally used for wrapping, bale covering and similar applications.

## 2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard :

IS No.	Title
1954 : 1990	Determination of length and width of woven fabrics — Methods ( <i>second revision</i> )
1964 : 1970	Methods for determination of weight per square metre and weight per linear metre of fabrics ( <i>first revision</i> )
1969 : 1985	Methods for determination of breaking load and elongation of woven textile fabrics ( <i>second revision</i> )
4905 : 1968	Method for random sampling
6192 : 1994	Textiles — Monoaxially oriented high density polyethylene tapes — Specification ( <i>second revision</i> )

## 3 MANUFACTURE

**3.1** The fabric shall be woven in plain weave from monoaxially oriented HDPE tapes conforming to IS 6192.

**3.1.1** HDPE tapes used for manufacturing the fabric for prolonged outdoor application shall be resistant to ultra-violet radiation. This shall be achieved by using a suitable percentage of carbon black in the HDPE granules or by using ultra-violet stabilized grade of HDPE granules as specified in the contract or order.

**3.2** The fabric shall have uniform and straight selvedges and shall be free from weaving defects, such as holes, cuts, tears, oil stains, etc.

## 4 REQUIREMENTS

**4.1** The high density polyethylene (HDPE) woven fabric shall conform to the requirements given in Table 1.

**4.1.1** Fabrics of mass other than those given in Table 1 may also be used subject to agreement between the buyer and the seller. In such case the fabric shall conform to breaking load calculated as under. For calculation of breaking load, tenacity of the HDPE tape shall be taken as 4.0 g/d, minimum.

NOTE — The strength may be calculated by the following formula:

a) Strength/5 cm width

$$= 4.0 \times \frac{D}{1000} \times \frac{M}{2} \text{ or } \frac{N}{2} \times 9.81 \text{ Newtons}$$

where

*D* = Denier of the tape,

*M* = Warp/dm, and

*N* = Weft/dm.

**Table 1 Requirements of HDPE Fabrics**  
(*Clauses 4.1 and 4.1.1*)

Variety No.	Mass of Unlaminated Fabric, g/m <sup>2</sup>	Breaking Load on 5.0 cm × 20 cm Cut Strips, N, Min		Width	Length
		Min	Warpway (3) Weftway (4)		
(1)	(2)				
1	53	410	350	As agreed to between the buyer and the seller	As agreed to between the buyer and the seller
2	70	540	465		
3	89	680	590		
4	110	755	650		
5	130	1 000	860		
Tolerance		—		± 2.0 percent	—
Method of Test		IS 1969	IS 1969	IS 1954	

NOTE — In case of laminated fabric, the increase in mass due to lamination of the fabric shall be atleast 23 g/m<sup>2</sup>.

## 5 PACKING

A suitable length of the fabric shall be formed into a roll. Each roll of the fabric shall be packed in a layer of HDPE film or as agreed to between the buyer and the seller.

## 6 MARKING

**6.1** Each roll of the fabric shall be marked with the following information:

- a) Name of the material;
- b) Length (m) and width (cm) of the fabric;
- c) Indication of the source of manufacture; and
- d) Year of manufacture.

### 6.1.1 BIS Certification Marking

The roll may also be marked with the Standard Mark.

**6.1.2** The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the rules and regulations made thereunder. The details of the conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

## 7 SAMPLING AND CRITERIA FOR CONFORMITY

### 7.1 Lot

In any consignment all the rolls of fabric of same construction shall be grouped together to constitute a lot.

**7.2** The number of rolls of fabric to be selected from a lot shall be in accordance with Table 2. The rolls shall be selected at random with the use of random number tables (*see IS 4905*).

**7.3** The conformity of the lot to the requirements of this standard shall be determined on the basis of the tests on the samples selected from it.

### 7.4 Tests and Criteria for Conformity

Fabric from each roll selected from the lot shall be tested for length, width, mass and breaking load. Any roll failing to meet the requirements as specified in Table 1 shall be considered a defective. The lot shall be considered acceptable, if the number of defective rolls does not exceed the permissible number given in col 3 of Table 2.

**Table 2 Scale of Sampling and Criteria for Conformity (Clauses 7.2 and 7.4)**

No. of Rolls of Fabric in the Lot (1)	No. of Rolls of Fabric to be Selected (2)	Permissible No. of Defects (3)
Up to 50	5	0
51 to 100	8	0
101 to 300	13	1
301 and above	20	1

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### Amendments Issued Since Publication

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